

Purchase Order Receipt Listing

Thursday, July 20, 2017 10:10:03 AM

Thursday, July 20, 2017 10:10:03 AM					All amounts are calculated in domestic currency.		
All Vendors	PO ID PO37040	Receipt Dates from 7/19/2017 to 7/19/2017	All Line Item Types	All Item ID/GL/WOs	All Rec. Employees	All Currencies	Grouped by Vendor ID

Page 1 of 2

All amounts are calculated in domestic currency.

All Vendors PO ID PO37040 Receipt Dates from 7/19/2017 to 7/19/2017 All Line Item Types
 All Item ID/GL/WOs All Rec. Employees All Currencies
 Grouped by Vendor ID

Purchase Order ID/ Curr Type	Line Nbr/ Insp Req	Project ID	Reference/ Description/ Cert Std	PO U/M / Stock U/M	Required Date/ Required Qty	Recv Date/ Recv Emp	Recv Qty (PO U/M)	Cost Per Unit/ Recv Value	Inspected Qty/ Rejected Qty (PO U/M)	MRB Qty/ MRB Reject Qty	Book Amt

Total Received Quantity: 409.0000
 Total Qty to Inspect (PO U/M): 0.0000
 Total Reject Quantity: 0.0000
 Total Receipt Value: \$0.00
 Total Balance Due Quantity: 0.0000



O'Neal High-Performance Metals Group



Packing
Slip

ORDER NO.: 60635888 FROM: CRAN PAGE 1

CUST NUMBER: 1203820 NET WGT: 58.756 REQ. DATE: 07/21/17 CONFIRMED
 SOLD TO: DART AEROSPACE LTD
 DART AEROSPACE LTD
 1270 ABERDEEN ST
 HAWKESBURY ON
 CANADA CN K6A 1K7
 CN K6A 1K7

SALESPERSON: DONNA SMALLEY
 TERMS: NET 30 DAYS
 F.O.B.: SHIPPING POINT
 CUST ORD NO.: PO37040

SHIP BY: 07/17/17
 VIA: COMMON CARRIER
 FREIGHT: PREPAID
 RELEASE NO.:
 RECEIVING PHONE:

LINE ITEM DESCRIPTION
 0001 41952 D6061-T6 3/8 OD X .058 WA

CLN# ORD QTY INVOICE QTY SHIPPED QTY LENGTH
 180.000 FT 180.000 FT 180.000 FT 12 FT ML
 WT 12.204

** 1 TEST REPORTS REQUIRED **
 ** 1 CERTS REQUIRED **

ECCN: EAR99 DAS Export License: NLR Expiration Date: 0/00/00
 PO:49361230 HT:1180968 5 PC: 15 CUSTOMER QTY: 180.000 UOM FT
 MLT:UNITED STATES MFG:UNITED STATES SLB/CL:438268

0002 42276 D6061-T6 1/2 OD X .058 WA ✓ 12 FT ML

CLN# ORD QTY INVOICE QTY SHIPPED QTY LENGTH
 48.000 FT 48.000 FT 48.000 FT 12 FT ML
 WT 4.545

** 1 TEST REPORTS REQUIRED **
 ** 1 CERTS REQUIRED 5*

ECCN: EAR99 8-89 Export License: NLR Expiration Date: 0/00/00
 PO:49365548 HT:F002361250001 PC: 4 CUSTOMER QTY: 48.000 UOM FT
 MLT:UNITED STATES MFG:UNITED STATES SLB/CL:222661

0003 42506 D6061-T6 5/8 OD X .049 WA ✓ 12 FT ML

CLN# ORD QTY INVOICE QTY SHIPPED QTY LENGTH
 24.000 FT 24.000 FT 24.000 FT 12 FT ML
 WT 2.494

** 1 TEST REPORTS REQUIRED DAS**

** 1 CERTS REQUIRED ** 5

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00
 PO:49363158 HT:F002325380001 PC: 2 CUSTOMER QTY: 24.000 UOM FT
 MLT:UNITED STATES MFG:UNITED STATES SLB/CL:222297

Spa7-20



O'Neal High-Performance Metals Group



Packing Slip

ORDER NO.: 60635888 FROM: CRAN PAGE 2

SALESPERSON: DONNA SMALLEY SHIP BY: 07/17/17
TERMS: NET 30 DAYS VIA: COMMON CARRIER
F.O.B.: SHIPPING POINT FREIGHT: PREPAID
CUST ORD NO.: PO37040 RELEASE NO.:

RECEIVING PHONE: 1234567890 WIDTH 12 LENGTH 12 FT. MI.

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	48.000 FT	48.000 FT	48.000 FT	6.428

** 1 TEST REPORTS REQUIRED **5**
** 1 CERTS REQUIRED ** **0-89**
ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00
PO:49352984 HT:F002180450002 PC: 4 CUSTOMER QTY: 48.000 UOM FT
MLT:UNITED STATES MFG:UNITED STATES SLB/CL:220820

0005 42588 D6061-T6 5/8 OD X .125 WA 12 FT ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	48.000 FT	48.000 FT	48.000 FT	11.082

** 1 TEST REPORTS REQUIRED **
** 1 CERTS REQUIRED ** **DAS**
ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00
PO: 49360917 HT: F002299760001 PC: 4 CUSTOMER QTY: 48.000 UOM FT
MLT: UNITED STATES MFG: UNITED STATES SLB/CL: 21973

0006 36860 SMLS CD 304/L A269 3/4 OD X .049 WA ✓ 20 CL

CLN#	ORD QTY	✓	INVOICE QTY	✓	SHIPPED QTY	✓	WT
	60.000	FT	60.000	FT	60.000	FT	22.003

** 1 TEST REPORTS REQUIRED **
** 1 CERTS REQUIRED **
ECCN: 2B999.g Export ~~0A5~~ License: NLR Expiration Date: 0/00/00
PO:49342471 PT:YX1501783 5 PC: 3 CUSTOMER QTY: 60.000 UOM FT
MLT:CHINA MFG:CHN 0A9 SLB/CL:11-63

1
THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL REVIEW.

<http://www.twmetals.com/invoice-terms.html>



O'Neal High-Performance Metals Group



**Packing
Slip**

ORDER NO.: 60635888 FROM: CRAN PAGE 3

CUST NUMBER: 1203820 NET WGT: 58.756 REQ. DATE: 07/21/17 CONFIRMED
SOLD TO: SHIP TO:
DART AEROSPACE LTD
1270 ABERDEEN ST
HAWKESBURY ON
CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 07/17/17
TERMS: NET 30 DAYS VIA: COMMON CARRIER
F.O.B.: SHIPPING POINT FREIGHT: PREPAID
CUST ORD NO.: PO37040 RELEASE NO.:
RECEIVING PHONE:

LINE	ITEM DESCRIPTION	WIDTH	LENGTH
BROKERS KUEHNE AND NAGEL LTD			

AREA	TYPE OF PKG	PACK INFO		WIDTH	LENGTH	Hght
		PKGS	GRS WEIGHT			
B	CARTON	1.000	109.000		246.0000	
B	REDDICRATE	1.000			150.0000	
		2.000	109.000			

BY: TB
RT 000- UNLOAD TYPE: NONE SPECIFIED

Sept-7-20

DATE SHIPPED _____

1

DATE FILLED

THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL
REVIEW.
<http://www.twmetals.com/invoice-terms.html>



O'Neal High-Performance Metals Group



**Packing
Slip**

ORDER NO.: 60635888 FROM: CRAN PAGE 4

CUST NUMBER: 1203820	NET WGT:	58.756	REQ. DATE: 07/21/17	CONFIRMED
SOLD TO: DART AEROSPACE LTD 1270 ABERDEEN ST HAWKESBURY ON CANADA		SHIP TO: DART AEROSPACE LTD 1270 ABERDEEN ST HAWKESBURY ON ONTARIO CANADA		
CN K6A 1K7		CN K6A 1K7		
SALESPERSON:	DONNA SMALLEY	SHIP BY:	07/17/17	
TERMS:	NET 30 DAYS	27 ENGLEHARD DRIVE		
F.O.B.:	SHIPPING POINT	MONROE TWP	NJ 08831	
CUST ORD NO.:	PO37040			
VIA:	COMMON CARRIER			
FREIGHT:	PREPAID			
RELEASE NO.:				
RECEIVING PHONE:				

"TW Metals MSDS data is available on our web site at www.twmetals.com. MSDS data can be found under the Technical Resources Tab, Product Statistics & Data and the TW Metals MSDS's heading. If you do not have web site access you may telephone 610-458-1300 and we will mail or fax a copy of our current MSDS data to your location."

"CERTIFICATE OF CONFORMANCE"

"TW Metals certifies that the material supplied on this purchase order and contained in the heat/lot number referenced above has been manufactured, inspected, and tested in accordance with the material specification. These records are on file at TW Metals. Packaging material for shipments to Europe and China consists of manufactured wood products and complies with the European emergency measures for coniferous non-manufactured wood packing material"

Authorized Test Report Clerk

Jessica Mannheim

Date: 7/17/17

These commodities have been exported from the United States in accordance with the U.S. export control laws, export administrations regulations. Diversion contrary to U.S. law prohibited.



PRECISION TUBE CO.
287 WISSAHICKON AVE.
NORTH WALES PA 19454

Control No: 2839

CERTIFIED TEST REPORT

CUSTOMER PURCHASE ORDER NO. M 49361230 LINE 001		CUST. ORD. NO. 438268	PRECISION TUBE P/N 24A037500580006						
SOLD: TW METALS TO 235 TUBEWAY CAROL STREAM, IL 60188 UNITED STATES		SHIP: TW METALS TO 235 TUBEWAY CAROL STREAM, IL 60188 UNITED STATES							
QUANTITY ORD.	DESCRIPTION		QTY. SHIPPED	DATE SHIPPED					
4008 FT	METAL - 6061 ALUM TEMPER - T6 SPEC - AMS 4082P AMS-WW-T-700/6C ASTM-B-210-12 LENGTH - 12 FT LGTH TOL +.1250 IN -.0000 IN SHAPE - ROUND FINISH - STRAIGHT EXACT LENGTHS OD .3750 +.0030 -.0030 ID .3750 +.0030 -.0030 WALL .0580 +.0040 -.0040		4188 FT	12/21/16					
MECHANICAL PROPERTIES									
SAMPLE #	TENSILE STRENGTH (P.S.I.)	YIELD STRENGTH (P.S.I.)	ELONGATION IN 2 INCHES (%)	ROCKWELL HARDNESS					
1	44,103	37,550	20						
DESTRUCTIVE TESTS									
Comments: FAR BAA COMPLIES, DFARS BAA COMPLIES, FAR TAA COMPLIES									
NON-DESTRUCTIVE TESTS									
EDDY CURRENT: PASS		DAS 5							
CHEMICAL COMPOSITION									
ALLOY: 6061		HEAT: TRACEABILITY #: 1180968							
		RAW MATL VENDOR: PTC7874 - Kaiser Aluminum							
Min	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Al
Max	0.40		0.15		0.80	0.04			Rem.
OTHER ELEMENTS: 0.05 MAX EACH / 0.15 MAX TOTAL									

DEC-20-16
REPORTS
JL
ACCEPTED BY

We hereby certify that the material has been manufactured and tested in accordance with the requirements of the applicable specifications and descriptions set forth on Precision Tube's sales acknowledgement. During the manufacturing, testing and inspection, the product did not come into direct contact with mercury or any of its compounds, nor with any mercury containing device employing a single boundry containment. Test results indicate that the material is compliant with the current revision of the RoHS Directive (2011/65/EU).

Melted and Manufactured in USA
QMS Registered to ISO 9001: 2008

By: Art Onalitis
Art Onalitis
QA Manager

12/21/16
Page: 1 of 1

KAISER

ALUMINUM

FABRICATED PRODUCTS

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
2425 STEVENS DRIVE
RICHLAND, WA 99352

CERTIFIED TEST REPORT

<http://OnlineKaiserAluminum.com>



CUSTOMER PO NUMBER		CUSTOMER PART NUMBER		PRODUCT DESCRIPTION							
PTC7874		SPIRIT-371850		5.400 LB/PC .500 LB/0 LB 1.312 OD X .085 WALL ESRT							
KAISER ORDER NUMBER:	LINE ITEM:	SHIP DATE:		KAISER LOT NUMBER:	ALLOY:	TEMPER:					
320897	001	10/28/2016		50751-347	6061	O					
WEIGHT SHIPPED:	QUANTITY:	B/L NUMBER:		DIAM/DAF/THKNS:	WIDTH:	LENGTH:					
10769.000 LB	1950.000 PCS	005171				13.984 FT					
SHIP TO:				SOLD TO:							
PRECISION TUBE CO 287 WISSAHICKON AVENUE N. WALES, PA 19454 USA				MUELLER INDUSTRIES, INC PRECISION TUBE 8285 TOURNAMENT DRIVE STE. 150 MEMPHIS, TN 38125 USA							

Actual Physical Properties

REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	%Elong in 2	HARDNESS	CONDUCT.	BEND
50751-347	0001	0001	18.7	5.9	27.2	NA N/A	N/A	N/A
50751-347	0001	0002	18.4	5.5	27.8	N/A	N/A	N/A
50751-347	0001	0003	18.3	5.6	27.1	N/A	N/A	N/A
50751-347	0001	0004	18.0	5.5	26.7	N/A	N/A	N/A
50751-347	0001	0005	18.3	5.9	27.2	N/A	N/A	N/A
50751-347	0001	0006	17.7	5.6	27.6	N/A	N/A	N/A
50751-347	0001	0007	18.3	5.9	26.8	N/A	N/A	N/A
50751-347	0001	0008	18.6	5.7	25.7	N/A	N/A	N/A
50751-347	0001	0009	18.2	5.5	26.5	N/A	N/A	N/A
50751-347	0001	0010	18.6	5.8	26.0	N/A	N/A	N/A
50751-347	0001	0011	18.5	5.7	28.6	N/A	N/A	N/A

Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	.0
F76091	.58	.30	.22	.06	1.03	.09	.08	.03	.00	.00	.00	.01	.02
F76216	.60	.30	.21	.05	1.01	.09	.07	.03	.00	.00	.00	.01	.02

Applicable Requirements:

ASTM-B241-16 NON-STENCILED ASTM-B221-14 ASTM-B345-11 AMS-QQ-A-200/3A TYPE I
UNS#A96061 Also conforms to EN 10204 3.1

Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA
MERCURY IS NOT A NORMAL BACKGROUND ELEMENT IN ALUMINUM ALLOYS. NEITHER MERCURY NOR ANY
OF ITS COMPOUNDS ARE UTILIZED BY KAISER ALUMINUM IN THE MANUFACTURE OF THIS MATERIAL.



Plant Serial: 00015006

Kaiser Order Number: 320897

Line Item: 001

KAISER **ALUMINUM** **FABRICATED PRODUCTS**

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
2425 STEVENS DRIVE
RICHLAND, WA 99352

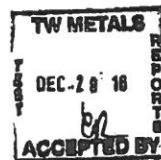
CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms and conditions of sale. Test reports are on file, subject to examination.

JOSEPH AMES, QUALITY MANAGER



KAISER

ALUMINUM

FABRICATED PRODUCTS

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
6573 W. WILLIS ROAD
CHANDLER, AZ 85226

CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

CUSTOMER PO NUMBER:		CUSTOMER PART NUMBER:		PRODUCT DESCRIPTION:		
M49365548-1		42276		Drawn Seamless Tube/Pipe		
KAISER ORDER NUMBER:	LINE ITEM:	SHIP DATE:	KAISER LOT NUMBER:	ALLOY:	TEMPER:	
222661	001	03/20/2017	F00236125	6061	T6	
WEIGHT SHIPPED:	QUANTITY:	B/L NUMBER:	DIAM/DAF/THKNS:	WIDTH:	LENGTH:	
443.000 LB	388.000 PCS	224652			12.000 FT	
SHIP TO:		SOLD TO:				
TW METALS INC 235 WEST TUBEWAY DRIVE CAROL STREAM, IL 60188 USA		TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA				

Actual Physical Properties

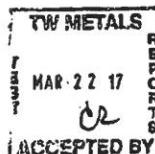
REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON%IACS	BEND
F00236125	0001	1	46.7	41.1	17.0	N/A	N/A	N/A
F00236125	0002	1	46.2	40.9	18.0	N/A	N/A	N/A

Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
D76510	.62	.23	.23	.05	.99	.07	.07	.02	.00	.00	.00	.01	.02

Applicable Requirements:

Description: OD: 0.5000"; Wall: 0.0580"; Round
AMS4082P AMS-WW-T-700/6C ASTM B210-12 WW-1-700/6F
WE TAKE EXCEPTION TO PARA. 5.2.1., Per AMS4082P, WAS NOT OILED.
This Product Complies to FAR BAA, DFARS BAA, FAR TAA
COMPLIES TO DIN EN 10204 JAN 2005
No Weld Repair. Mercury Free.



Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA
(DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5
TRADE AGREEMENTS).

Plant Serial: 00024461
Kaiser Order Number: 222661
Line Item: 001

KAISER ALUMINUM FABRICATED PRODUCTS

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
6573 W. WILLIS ROAD
CHANDLER, AZ 85226

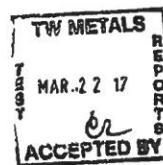
CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentmidt, Quality Manager



Plant Serial: 00024461
Kaiser Order Number: 222661
Line Item: 001

KAISER ALUMINUM
 FABRICATED PRODUCTS, LLC
 6573 W. WILLIS ROAD
 CHANDLER, AZ 85226

CUSTOMER PO NUMBER:		CUSTOMER PART NUMBER:		PRODUCT DESCRIPTION:		
M49363158-1		42506		Drawn Seamless Tube/Pipe		
KAISER ORDER NUMBER:	LINE ITEM:	SHIP DATE:	KAISER LOT NUMBER:	ALLOY:	TEMPER:	
222297	001	01/31/2017	F00232538	6061	T6	
WEIGHT SHIPPED:	QUANTITY:	B/L NUMBER:	DIAM/DAF/THKNS:	WIDTH:	LENGTH:	
510.000 LB	409.000 PCS	224220			12.000 FT	
SHIP TO:			SOLD TO:			
TW METALS INC 235 WEST TUBEWAY DRIVE CAROL STREAM, IL 60188 USA			TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA			

Actual Physical Properties

DAS	REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON%IACS	BEND
5	F00232538	0001	1	46.2	39.8	17.0	N/A	N/A	N/A
9-89	F00232538	0002	1	47.7	41.5	17.0	N/A	N/A	N/A

Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
D83226	.60	.27	.25	.05	1.00	.08	.05	.03	.00	.00	.00	.01	.02

Applicable Requirements:

Description: OD: 0.6250"; Wall: 0.0490"; Round @
 AMS4082P AMS-WW-T-700/6C ~~ASTM B210-12~~ WW-T-700/6F
 WE TAKE EXCEPTION TO PARA. 5.2.1., Per AMS-4082P, WAS NOT OILED.
 This Product Complies to FAR BAA, DFARS BAA, FAR TAA
 COMPLIES TO DIN EN 10204 JAN 2005
 No Weld Repair. Mercury Free.



Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA
 MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA
 (DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5
 TRADE AGREEMENTS).

Plant Serial: 00024039
 Kaiser Order Number: 222297

Line Item: 001

KAISER ALUMINUM FABRICATED PRODUCTS

*Best in
Class*

CERTIFIED TEST REPORT

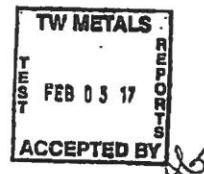
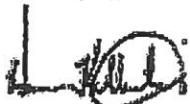
<http://Online.KaiserAluminum.com>

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
6573 W. WILLIS ROAD
CHANDLER, AZ 85226

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager



Plant Serial: 00024039
Kaiser Order Number: 222297

Page 2 of 2

Line Item: 001

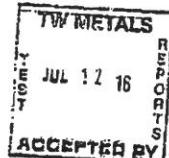
[Signature]

KAISER
ALUMINUM
FABRICATED PRODUCTS

KAISER ALUMINUM
 FABRICATED PRODUCTS, LLC
 6573 W. WILLIS ROAD
 CHANDLER, AZ 85226

CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>



CUSTOMER PO NUMBER:		CUSTOMER PART NUMBER:		PRODUCT DESCRIPTION:				
M49352984-1		42558		Drawn Seamless Tube/Pipe				
KAISER ORDER NUMBER:		LINE ITEM:		SHIP DATE:	KAISER LOT NUMBER:	ALLOY:		
220820		001		07/05/2016	F00218045	6061		
WEIGHT SHIPPED:		QUANTITY:		B/L NUMBER:	DIAM/DAF/THKNS:	TEMPER:		
558.000 LB		346.000 PCS		222226		T6		
SHIP TO:				SOLD TO:				
TW METALS INC 235 WEST TUBEWAY DRIVE CAROL STREAM, IL 60188 USA				TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA				

DAS
 5

Actual Physical Properties

REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON%IACS	BEND
F00218045	0001	1	48.7	43.2	17.0	N/A	N/A	N/A
F00218045	0002	1	46.9	40.8	18.0	N/A	N/A	N/A

Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
D76011	.60	.24	.23	.03	.97	.07	.05	.02	.00	.00	.00	.01	.03

Applicable Requirements:

Description: OD: 0.6250"; Wall: 0.0650"; Round @
 AMS 4082P AMS WW-T-700/6C ASTM B210-12 WW-T-700/6F
 WE TAKE EXCEPTION TO PARA. 5.2.1. Per AMS-4082P, WAS NOT OILED.
 This Product Complies to FAR BAA, DFARS BAA, FAR TAA
 COMPLIES TO DIN EN 10204 JAN 2005
 No Weld Repair. Mercury Free.

Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA
 MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA
 (DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5
 TRADE AGREEMENTS).

Plant Serial: 00022478

Kaiser Order Number: 220820

Line Item: 001

MB

KAISER

ALUMINUM

FABRICATED PRODUCTS

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
6573 W. WILLIS ROAD
CHANDLER, AZ 85226

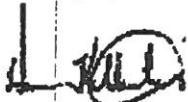
CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager



KAISER

ALUMINUM

FABRICATED PRODUCTS

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
6573 W. WILLIS ROAD
CHANDLER, AZ 85226

Boettin Glass

CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

CUSTOMER PO NUMBER:		CUSTOMER PART NUMBER:		PRODUCT DESCRIPTION:		
M49360917-1		42588		Drawn Seamless Tube/Pipe		
KAISER ORDER NUMBER:	LINE ITEM:	SHIP DATE:	KAISER LOT NUMBER:	ALLOY:	TEMPER:	
221973	001	12/05/2016	F00229976	6061	T6	
WEIGHT SHIPPED:	QUANTITY:	B/L NUMBER:	DIAM/DAF/THKNS:	WIDTH:	LENGTH:	
239.000 LB	86.000 PCS	223667			12.000 FT	
SHIP TO:	SOLD TO:					
TW METALS INC 27 ENGLEHARD DRIVE EXIT 8A OFF NJ TPK MONROE TWP, NJ 08831 USA	TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA					

Actual Physical Properties

REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON% IACS	BEND
F00229976AS	0001	1	46.9	40.5	17.5	N/A	N/A	N/A
5 9-89								

Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
D76008	.59	.26	.22	.04	1.00	.10	.05	.02	.00	.00	.00	.01	.02

Applicable Requirements:

Description: OD: 0.6250"; Wall: 0.1250"; Round @
AMS4082P AMS-WW-T-700/6C ASTM B210-12 WW-T-700/6F
WE TAKE EXCEPTION TO PARA. 5.2.1, Per AMS-4082P, WAS NOT OILED.
This Product Complies to FAR BAA, DFARS BAA, FAR TAA
COMPLIES TO DIN EN 10204 JAN 2005
No Weld Repair. Mercury Free.

Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA
(DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5
TRADE AGREEMENTS).



Plant Serial: 00023570
Kaiser Order Number: 221973
Line Item: 001

KAISER
ALUMINUM
FABRICATED PRODUCTS

*BEST in
Class*

CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
6573 W. WILLIS ROAD
CHANDLER, AZ 85226

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager



PUFA™

Producer of Premium Stainless Steel Seamless Tubes

MILL TEST REPORT

Purchaser.: TW METALS-Cranbury	Certificate No.: 16-1-13				
Contract No.: TWM P.O.No.: M49342471	Date of Issue.: 2016.1.5				
Commodity: Stainless Steel Seamless Tubes	Specifications: ASTM A213-15c/ASME SA213-15/ASTM A269-15a EAW				
Process: Cold Drawn	Delivery Condition: OD Polished to 240 Grit				
Steel Grade	Heat Number 5	Lot Number	Dimensions	Quantity	
TP304/TP304L	YX1501-783	11-63	3/4" x 0.049" x 20'	Pieces	Feet
250 5,000					

Chemical Composition by Weight (%)

Element	C	Mn	P	S	Si	Cr	Ni	Mo	Co
Requirements	≤0.035	≤2.00	≤0.045	≤0.030	≤1.00	18.00-20.00	8.00-12.00	-	-
Ladle Analysis	0.012	0.68	0.031	0.001	0.37	18.35	8.05	-	-
Product Analysis	0.019	0.70	0.033	0.002	0.39	18.37	8.31	-	-

Mechanical Properties

Test Item	Elongation (% in 2")	Tensile Strength (PSI)		Yield Strength (PSI)		
		Rm	Rp / 0.2%			
Requirements	≥35	≥75,000	≥30,000			
Test Results	65/66	89,000/90,000	34,000/35,000			
Test Item	Reduction of Area Z (%)	Hardness	Cold Bend Test	Flaring Test	Flattening Test	P.M.I. Test
Requirements	-	HRB≤80	-	22%	e=0.09	-
Test Results	-	75/77	-	Passed	Passed	OK
Test Item	Eddy Current Test	Air Underwater Pressure Test	Ultrasonic Test	Intergranular Corrosion Test	Macroscopic Inspection	
Requirements	ASTM E 426	-	-	ASTM A262 E	End Cut	Appearance
Test Results	Passed	-	-	OK	OK	OK

ISO 9001:2008 Certified by Intertek 110703068

PED Certified by SZUTEST 2195-PED-1526002

Additional Remarks:

- (1) All tubes annealed to above 1900 Deg F and water quenched below 800 Deg F in 3 minutes
- (2) All tubes tested per ASTM A1016-14
- (3) Materials is NACE MR0103-2007 compliant (per Section 2.5)
- (4) Materials is NACE MR0175/ISO 15156-2003 compliant (per Section 4.2.1)
- (5) In Compliance with EN 10204-3.1
- (6) In Compliance with RoHS Stipulation
- (7) No weld repair performed
- (8) Free from mercury contamination
- (9) Free from radioactive contamination
- (10) Billets melt and pipes/tubes manufactured in China
- (11) All tubes 100% PMI tested
- (12) All tubes 100% Eddy Current tested

CANNOT CERTIFY COMPLIANCE
FAR BAA / DFARS BAA / FAR TAA

By:

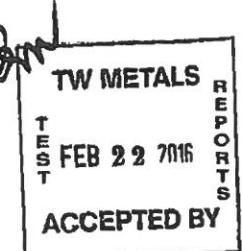


James Shi

James Shi / Manager
Quality Control Department

We hereby certify that this report is true and correct.

Shanghai Pufa Stainless Steel Pipe Factory
No. 59, Shuangye Road, Wanggang, New Pudong District, Shanghai, China



MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M661T6 to, 375 W.058
 DATE: JUL 20 2017

PO / BATCH NO: PO 37040/M138083

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 180
 QUANTITY INSPECTED: 180
 QUANTITY REJECTED: &

THICKNESS ORDERED: W.058
 THICKNESS RECEIVED: W.060
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <u>N</u>	
CORRECT FINISH	Y <u>N</u>	
CORROSION	Y <u>N</u>	
CORRECT GRAIN DIRECTION	Y <u>N</u>	
CORRECT MATERIAL PER M-DRAWING	Y <u>N</u>	<i>ASm B 210</i>
CORRECT THICKNESS	Y <u>N</u>	
PHOTO REQUIRED	Y <u>N</u>	
CORRECT REF # TO LINK CERT	Y <u>N</u>	
CORRECT MATERIAL IDENTIFICATION	Y <u>N</u>	<i>H1#1180968</i>
CORRECT M# ON THE MATERIAL	Y <u>N</u>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <u>N</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <u>N</u>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	

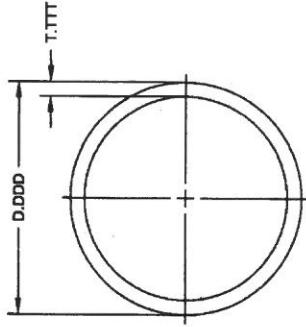
testers located in the Quality Office

QC 18 INSPECTION	DAS	5	9-89	ENGINEERING SIGNOFF (if required)
INSPECTED BY: _____				SIGNED OFF BY: _____
DATE: <u>JUL 20 2017</u>				DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

PURCHASE MATERIAL: 6061-T6/T6510/T6511 SEAMLESS TUBING
 SPECIFICATION: **DAS**
 5
 PART NUMBER: M6061T6TID:DDDIWTT:TTT
 MATERIAL TOLERANCE: PER ANSI H35.2

WHERE "D:DDD" = OD IN INCHES
 "T:TTT" = WALL THICKNESS
 EG. 3/8" OD X 0.058 WALL = M6061T6T0.375W0.058



RELEASED
2013-07-02

COMPLETE REFORMAT ADDED T8510 & T8511.		AJS	13.06.12
C	ADDED AMS 4083, ASTM B210 & ASTM B241		
B	ADD QQ-A-2008 & QQ-A-22558	CP	04.01.23
A	NEW ISSUE	DS	01.06.21
REV.	DESCRIPTION	BY	DATE
DESIGN	AJS	DART AEROSPACE LTD	
DRAWN	AJS	HAWTHORPE, ONTARIO, CANADA	
CHECKED	<i>[Signature]</i>	REV. C	
MFG. APPR.	<i>[Signature]</i>	SHEET 1 OF 1	
APPROVED	<i>[Signature]</i>	SCALE	
DE APPR.	<i>[Signature]</i>	NTS	
DATE	13.06.12	COPYRIGHT © 2001 BY DART AEROSPACE LTD	
		THIS DOCUMENT IS A PRIVATE AND CONFIDENTIAL DRAWING AND IS NOT TO BE COPIED OR DISCLOSED TO ANYONE EXCEPT THOSE EMPLOYEES OF DART AEROSPACE LTD WHO ARE DIRECTLY INVOLVED IN THE DESIGN, MANUFACTURE, OR ASSEMBLY OF THE EQUIPMENT DESCRIBED HEREIN.	

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M60G1GTC,500W,058
 DATE: JUL 20 2017

PO / BATCH NO.: PO37040/M138083

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 481
 QUANTITY INSPECTED: 481
 QUANTITY REJECTED: 0

THICKNESS ORDERED: W.058
 THICKNESS RECEIVED: W.058
 SHEET SIZE ORDERED: _____
 SHEET SIZE RECEIVED: N/A

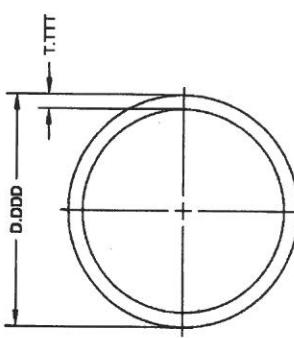
DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <u>N</u>	
CORRECT FINISH	Y <u>N</u>	
CORROSION	Y <u>N</u>	
CORRECT GRAIN DIRECTION	Y <u>N</u>	
CORRECT MATERIAL PER M-DRAWING	Y <u>N</u>	ASTm B210
CORRECT THICKNESS	Y <u>N</u>	
PHOTO REQUIRED	Y <u>N</u>	
CORRECT REF # TO LINK CERT	Y <u>N</u>	HT # F0023C125
CORRECT MATERIAL IDENTIFICATION	Y <u>N</u>	
CORRECT M# ON THE MATERIAL	Y <u>N</u>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <u>N</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <u>N</u>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>5</u> DATE: <u>JUL 20 2017</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

	1	2	3	4	5	6	7	8
D	C	B	A	3	4	5	6	7
								
<p>PURCHASE MATERIAL: 80801-16-T62/T8510/T8511 SEAMLESS TUBING DAS SPECIFICATION: 5 MM-T-7006 OR QQ-A-2008 OR QQ-A-2258 OR AMS-4086 OR AMS 4082 OR AMS 4083 OR ASTM B210 OR ASTM B241</p>								
<p>PART NUMBER: M600116T1D.000[WT.TTT] OD [WALL]</p>								
<p>WHERE "D.000" = OD IN INCHES "T.000" = WALL THICKNESS</p>								
<p>EG. 3/8" OD X 0.058 WALL = M600116T0.375W0.058</p>								
<p>MATERIAL TOLERANCE: PER ANSI H35.2</p>								
<p>RELEASED <i>[Signature]</i> 2013-07-02</p>								
<p>DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA</p>								
<p>REVISION: C DRAWING NO. M606116T1 TITLE 6081-T6 TUBING</p>								
<p>COMPILED BY DART AEROSPACE LTD NO. 6081-T6 TUBING SHEET 1 OF 1 SCALE NTS NTS</p>								
<p>CONFIDENTIAL © 2011 BY DART AEROSPACE LTD THIS DOCUMENT CONTAINS TRADE SECRET INFORMATION AND IS NOT TO BE SHARED OR DISCLOSED EXCEPT TO AN APPROVED CONTRACTOR OR SUBCONTRACTOR TO ANY OTHER PERSON WITHOUT THE WRITTEN CONSENT OF DART AEROSPACE LTD</p>								
<p>1 2 3 4 5 6 7 8</p>								

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M606146+0.625W.049
 DATE: JUL 20 2017

PO / BATCH NO.: P037040/M138083

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 241
 QUANTITY INSPECTED: 241
 QUANTITY REJECTED: 0

THICKNESS ORDERED: W.049
 THICKNESS RECEIVED: W.049
 SHEET SIZE ORDERED: _____
 SHEET SIZE RECEIVED: N/A

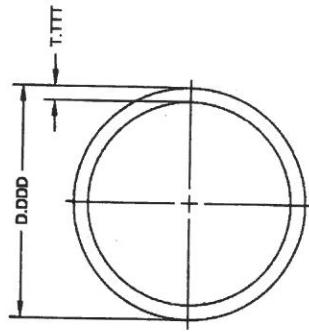
DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT FINISH	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORROSION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT GRAIN DIRECTION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT MATERIAL PER M-DRAWING	Y <input checked="" type="radio"/> N <input type="radio"/>	Astm B31.0
CORRECT THICKNESS	Y <input checked="" type="radio"/> N <input type="radio"/>	
PHOTO REQUIRED	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT REF # TO LINK CERT	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT MATERIAL IDENTIFICATION	Y <input checked="" type="radio"/> N <input type="radio"/>	HT # F00232538
CORRECT M# ON THE MATERIAL	Y <input checked="" type="radio"/> N <input type="radio"/>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="radio"/> N <input type="radio"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="radio"/> N <input type="radio"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>5</u> <u>0-89</u>	SIGNED OFF BY: _____
DATE: <u>JUL 20 2017</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



PURCHASE MATERIAL: 8081-T8/T82/T8510/T8511 SEAMLESS TUBING

WW-T-7006
OR QD-A-200/8 OR QD-A-225/8

OR AMS 4080 OR AMS 4082 OR AMS 4083
OR ASTM B210 OR ASTM B241

9-89

OR AMS 4080 OR AMS 4082 OR AMS 4083

C

PART NUMBER:

M6081T8TD.000WT.000

OD | WALL

WHERE "D.000" = OD IN INCHES

"T.000" = WALL THICKNESS

EG. 3/8" OD X 0.058 WALL = M6081T8TD.375WT.0058

MATERIAL TOLERANCE:

PER ANSI H35.2

C

RELEASED
2013-07-02
JW

A		B		C		D	
C	COMPLETE REFORMAT, ADDED B810 & T8511, ADDED AMS 4083, ASTM B210 & ASTM B241.	AJS	13.08.12	B	ADDED MATERIAL TOLERANCE	CP	04.01.23
B	ADD QQ-A-200/8 & QQ-A-225/8	DS	01.08.21	A	NEW ISSUE	DS	01.08.21
A		DESCRIPTION	DATE	REV.		BY	DATE
REV.				DESIGN	AJS	DART AEROSPACE LTD	
				DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
				CHECKED	✓	DRAWING NO.	REV. C
				MFG. APPR.	JW	M6081T8TD	SHEET 1 OF 1
				APPROVED	✓	TITLE	SCALE
				DE APPR.	✓	6081-T8 TUBING	NTS
				DATE	13.06.12		

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MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061H6T0,625W.065
 DATE: JUL 20 2017

PO / BATCH NO.: PO37040/M138083

MATERIAL CERT REC'D: YES
 QUANTITY RECEIVED: 481
 QUANTITY INSPECTED: 481
 QUANTITY REJECTED: 0

THICKNESS ORDERED: W.065
 THICKNESS RECEIVED: W.065
 SHEET SIZE ORDERED: _____
 SHEET SIZE RECEIVED: N/A

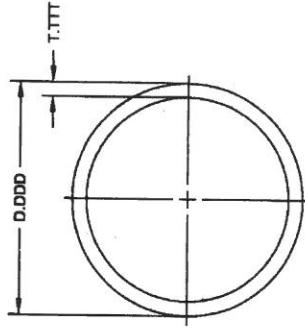
DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/>	
CORRECT FINISH	Y <input checked="" type="radio"/>	
CORROSION	Y <input checked="" type="radio"/>	
CORRECT GRAIN DIRECTION	Y <input checked="" type="radio"/>	
CORRECT MATERIAL PER M-DRAWING	Y <input checked="" type="radio"/>	N
CORRECT THICKNESS	Y <input checked="" type="radio"/>	
PHOTO REQUIRED	Y <input checked="" type="radio"/>	
CORRECT REF # TO LINK CERT	Y <input checked="" type="radio"/>	
CORRECT MATERIAL IDENTIFICATION	Y <input checked="" type="radio"/>	N
CORRECT M# ON THE MATERIAL	Y <input checked="" type="radio"/>	N
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="radio"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="radio"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> <u>5</u> <u>9-89</u>	<u>JUL 20 2017</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



PURCHASE MATERIAL: 6061-T6/7627651076511 SEAMLESS TUBING
 SPECIFICATION: WW-T-700/6
 OR QQ-A-2008 OR QP-Q-2258
 OR AMS 4068:QR, AMS 4082 OR AMS 4083
 OR ASTM B210 OR Q-5751 B241

PART NUMBER: M6061T6T6ID:DDDWT:T:TTT
 OD | WALL

WHERE "D.DDD" = OD IN INCHES

"T:TTT" = WALL THICKNESS

EG. 3/8" OD X 0.058 WALL = M6061T6T6ID:375WT:0.058

MATERIAL TOLERANCE: PER ANSI H85.2

RELEASED
 2013-07-02
 [Signature]

COMPLETE REFORMAT: ADDED TS510 & TS511. ADDED AMS 4083, ASTM B210 & ASTM B241. ADDED MATERIAL TOLERANCE		AJS	13.06.12
B ADD QQ-A-2008 & QQ-A-2258		CP	04.01.23
A NEW ISSUE		DS	01.06.21
REV.	DESCRIPTION	BY	DATE
DESIGN	AJS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS	DRAWING NO. M6061T6T	
CHECKED	[Signature]	REV. C	SHEET 1 OF 1
MFG. APPR.	[Signature]	TITLE	SCALE
APPROVED	[Signature]	6061-T6 TUBING	NTS
DE APPR.			
DATE	13.06.12		

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MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M60617670.625W.125
 DATE: JUL 20 2017

PO / BATCH NO.: PO37049/M138083

MATERIAL CERT REC'D: YES
 QUANTITY RECEIVED: 48'
 QUANTITY INSPECTED: 48'
 QUANTITY REJECTED: 0

THICKNESS ORDERED: W.125
 THICKNESS RECEIVED: W.125
 SHEET SIZE ORDERED: _____
 SHEET SIZE RECEIVED: N/A

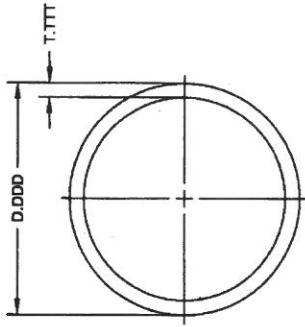
DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
CORRECT FINISH	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
CORROSION	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
CORRECT GRAIN DIRECTION	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
CORRECT MATERIAL PER M-DRAWING	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	<i>ASTm B210</i>
CORRECT THICKNESS	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
PHOTO REQUIRED	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
CORRECT REF # TO LINK CERT	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
CORRECT MATERIAL IDENTIFICATION	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	<i>HX 11F0022 9976</i>
CORRECT M# ON THE MATERIAL	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>5</u> <u>9-89</u>	SIGNED OFF BY: _____
DATE: <u>JUL 20 2017</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



PURCHASE MATERIAL: 6081-T6/T62/T6510/T6511 SEAMLESS TUBING
 SPECIFICATION: DA-SWM-T-7006
 OR QQ-A-2008 OR QQ-A-2256
 5 OR AMS 4080 OR AMS 4082 OR AMS 4083
 OR ASTM B210 OR ASTM B241

9-3
 PART NUMBER:
 M6081T6T[D.000][T.000]
 OD [WALL]

WHERE "D.000" = OD IN INCHES
 "T.000" = WALL THICKNESS

EG. 3/8" OD X 0.058 WALL = M6081T6T0.375W0.058

PER ANSI H35.2

MATERIAL TOLERANCE:

RELEASED
 2013-07-02

COMPLETE REFORMAT ADDED T8510 & T8511.		A/S	19.06.12	
ADDED AMS 4083, ASTM B210 & ASTM B241				
ADDED MATERIAL TOLERANCE		CP	04.01.23	
ADD QQ-A-2008 & QQ-A-2256				
A NEW ISSUE		DS	01.06.21	
REV.				
DESCRIPTION		BY DATE		

DESIGN	A/S	DART AEROSPACE LTD	
DRAVIN	A/S	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>[Signature]</i>	REV. C	
MFG. APPR.	<i>[Signature]</i>	DRAWING NO.	
APPROVED	<i>[Signature]</i>	M6081T6T	
DE APPR.	<i>[Signature]</i>	TITLE	
DATE	13.06.12	6081-T6 TUBING	
		SCALE	
		NTS	

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REV. C
 SHEET 1 OF 1
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MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304TR3,750W.049
 DATE: JUL 20 2017

PO / BATCH NO: POB7049/M138083

MATERIAL CERT REC'D:

QUANTITY RECEIVED: 60 ys

QUANTITY INSPECTED: 60

QUANTITY REJECTED: 0

THICKNESS ORDERED:

THICKNESS RECEIVED:

SHEET SIZE ORDERED:

SHEET SIZE RECEIVED:

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	BUT found acceptable. 10
CORRECT FINISH	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
CORROSION	<input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Astm A213
CORRECT THICKNESS	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
PHOTO REQUIRED	<input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	HT # YX1501783
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>5</u> <u>9-09</u> <u>JUL 20 2017</u> DATE:	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING

SPECIFICATION: ~~ASTM A213 OR ASME SA213 OR ASTM A269~~

9-89 WALL THICKNESS TOLERANCE PER ASTM A269 AS FOLLOWS:

OD (IN)	PERMISSABLE OD TOL. (IN)	PERMISSABLE WALL TOL.
UP TO $\frac{1}{2}$	± 0.005	$\pm 15\%$
$\frac{1}{2}$ TO $1\frac{1}{2}$ EXCL.	± 0.005	$\pm 10\%$
$1\frac{1}{2}$ TO $3\frac{1}{2}$ EXCL.	± 0.010	$\pm 10\%$
$3\frac{1}{2}$ TO $5\frac{1}{2}$ EXCL.	± 0.015	$\pm 10\%$
$5\frac{1}{2}$ TO 8, EXCL.	± 0.030	$\pm 10\%$

PART NUMBER:

M304TR DDDD W TTT
OD | | WALL

WHERE "D,DDD" = OUTSIDE DIAMETER IN INCHES
AND "TTT" = WALL THICKNESS IN INCHES

EG. 0.375" OD X 0.065" WALL TUBING = M304TR0.375W.065

RELEASED
R
01/08/23 14:07

B	REFORMAT DWG ADD SPECS (ZN D8-1).	CP	08.10.20
A	NEW ISSUE	DS	01.06.08
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>[Signature]</i>	DRAWING NO.	DART AEROSPACE LTD
DRAWN		HAWKESBURY, ONTARIO, CANADA	REV. B
CHECKED		M304TR	SHEET 1 OF 1
MFG. APPR.		TITLE	SCALE
APPROVED		304/316 ROUND TUBING	NTS
DE APPR.			
DATE	08.10.20		

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Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO37040**

Purchase Order Date 7/13/2017
PO Print Date 7/14/2017

Page Number 1 of 4

Order From : VU-TWM001

TW METALS
PO BOX 933014
ALTANTA, GA 31193-3014
US

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

E-MAILED
JUL 14 2017

Contact Name		Buyer	Chantal Lavoie
Vendor Phone	585 768 5600	Customer POID	
Ship To Contact		Customer Tax #	10127-2607
Ship To Phone		Terms	Net 30
Ship Via:	YRC COLLECT	Currency	USD
Ship Acct:		FOB	FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	CD Promise Date	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	M6061T6T0.375W.058	6061-T6 RD Tube .375 x.058W	7/21/2017	7/21/2017	180.00 f	\$2.15	\$387.00

MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING
AS PER WW-T-700/6 OR QQ-A-200/8 OR QQ-A-225/8 OR
AMS 4080 OR AMS 4082 OR AMS 4083 OR ASTM B210 OR
ASTM B241

2	M6061T6T0.500W.058	6061-T6 RD Tube .500 x.058W	7/21/2017	7/21/2017	40.00 f	\$1.75	\$70.00
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MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING
AS PER WW-T-700/6 OR QQ-A-200/8 OR QQ-A-225/8 OR
AMS 4080 OR AMS 4082 OR AMS 4083 OR ASTM B210 OR
ASTM B241

Recd 48 ft
SO 7-20

Line Total: \$70.00

Note:



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO37040**

Purchase Order Date 7/13/2017

PO Print Date 7/14/2017

Page Number 2 of 4

Order From : VU-TWM001

TW METALS
PO BOX 933014
ALTANTA, GA 31193-3014
US

Ship To : DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 585 768 5600

Ship To Contact
Ship To Phone
Ship Via: YRC COLLECT
Ship Acct:

Buyer Chantal Lavoie
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency USD
FOB FCA - (Free Carrier)

3	M6061T6T0.625W.049	✓ 6061-T6 RD Tube .625 x.049W	✓ 7/21/2017	20.00	\$3.50	\$70.00
			Yes 7/21/2017	f	Rece 24 ft	84.00

MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING
AS PER WW-T-700/6 OR QQ-A-200/8 OR QQ-A-225/8 OR
AMS 4080 OR AMS 4082 OR AMS 4083 OR ASTM B210 OR
ASTM B241

4	M6061T6T0.625W.065	✓ 6061-T6 RD Tube .625 x.065W	✓ 7/21/2017	40.00	\$3.15	\$126.00
			Yes 7/21/2017	f	Rece 48 ft	151.20

MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING
AS PER WW-T-700/6 OR QQ-A-200/8 OR QQ-A-225/8 OR
AMS 4080 OR AMS 4082 OR AMS 4083 OR ASTM B210 OR
ASTM B241

Line Total: \$70.00

Line Total: \$126.00

Line Total: \$126.00

Note:



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO37040**

Purchase Order Date 7/13/2017
PO Print Date 7/14/2017

Page Number 3 of 4

Order From : TW METALS
PO BOX 933014
ALTANTA, GA 31193-3014
US

VU-TWM001

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 585 768 5600
Ship To Contact
Ship To Phone
Ship Via: YRC COLLECT
Ship Acct:

Buyer Chantal Lavoie
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency USD
FOB FCA - (Free Carrier)

5	M6061T6T0.625W.125	6061-T6 RD Tube 0.625 X.125W	7/21/2017	40.00	\$5.15	\$206.00
			Yes	f		247.20.
			7/21/2017			

MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING
AS PER WW-T-700/6 OR QQ-A-200/8 OR QQ-A-225/8 OR
AMS 4080 OR AMS 4082 OR AMS 4083 OR ASTM B210 OR
ASTM B241

6	M304TR0.750W.049	304 RD Tube .750 x .049W	7/21/2017	60.00	Line Total:	\$206.00
			Yes	f		
			7/21/2017			

MATERIAL: AISI 304/316 SA SEAMLESS ROUND TUBING
AS PER ASTM A213 OR AMSE SA213 OR ASTM A269

7	D6210P	304 Tube, Seamless 1/8 HARD	7/21/2017	40.00	Line Total:	\$126.00
			Yes	f		
			7/21/2017			

AS PER DWG D6210 REV. A3

B164142

MATERIAL 304 ROUND TUBING SEAMLESS, 1/8 HARD AS PER AMS 5566 OR AMS T-6845 OR MIL-T-6845

Note:



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO37040**

Purchase Order Date 7/13/2017
PO Print Date 7/14/2017

Page Number 4 of 4

Order From : VU-TWM001

TW METALS
PO BOX 933014
ALTANTA, GA 31193-3014
US

Ship To : DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 585 768 5600

Ship To Contact
Ship To Phone
Ship Via: YRC COLLECT
Ship Acct:

Buyer Chantal Lavoie
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency USD
FOB FCA – (Free Carrier)

				Line Total:	
8	71401-45	PROCUREMENT QUALITY CLAUSES	7/21/2017	1.00	\$460.00
			No		\$0.00
		Procurement Quality Clauses	7/21/2017		\$0.00
		A005 right of entry			
		A012 chemical and physical test report			
		A016 personnel qualification			
		A017 raw material identification (as applicable)			
		A026 certification of material conformance			
		A041 quality management system			
		A042 dart notification by supplier			
		A043 retension of quality documents			

Line Total: \$0.00

PO Total: \$1,445.00

Note: Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.